Clinical Features and Management of Dentoalveolar Abscess in Children
Introduction

- Abscess is a local collection of pus.
- It is composed of dead cells-leucocytes, bacteria.
- It is high in protein, often whitish-yellow, brownish and occasionally greenish (pyocyanin).
Prevalence

• 6.4% of children presented with dentoalveolar abscess in a dental clinic in Nigeria (Azodo et al., 2012).

• Often a complication of untreated dental problems - caries, fractures, dental anomalies like talons cusp, dens evaginatus, dentinogenesis imperfecta, dentinal dysplasia resulting in unusual dental abscesses.
Pathogenesis

• Often polymicrobial.
• Facultative anaerobes, such as the viridans group *Streptococci* and the *Streptococcus anginosus* group.
• Strict anaerobes, especially anaerobic cocci, *Prevotella* and *Fusobacterium* species (Nair, 2004).
Clinical features

• Fever, pains, head ache, malaise, weight loss, facial asymmetry if any of the facial space(s) is involved.

• Palpable submandibular nodes, submental lymphnodes of the affected side.

• Mouth opening may also be limited.
Clinical features - 2

• Intraorally, the gingiva surrounding the involved primary tooth will be hyperemic, tender, swollen and a discharging sinus may also be present.

• The swelling is around the attached gingiva of the involved primary tooth as a result of the numerous accessory canals which open up in the furcation area.
Clinical features - 3

• The pus will erode the alveolar bone around the furcation area and then form a swelling.
• This is often referred to as “gum boil” or inappropriately called periodontal abscess because it resembles the periodontal abscess seen in the permanent tooth.
Child with buccal space infection from dentoalveolar abscess of a primary molar
Dentoalveolar abscess as a result of a traumatized central incisor
Clinical features

• For the permanent tooth, the abscess is towards the apex of the root. The infection usually involves the whole pulp tissue and then cause swelling around the apex of the tooth.

• This is because permanent teeth have less number of accessory canals when compared to the primary teeth.
Complications

• School hours are lost.
• Feeding is affected because of inability to chew with that side of the mouth which may eventually lead to weight loss.
• Caregiver absenteeism from work.
• There is also financial implication for the management.
Complications - 2

- Hypoplasia of the permanent tooth (turner’s tooth) may occur.
- It can also lead to carvenous sinus thrombosis, brain abscess, Ludwig angina, occasionally death (Shweta and Prakash, 2013).
Treatment

• Antibiotics and analgesics are given.
• Pulpectomy if the primary tooth is still restorable and if the furcation area has not been perforated.
• A temporary crown like stainless steel crown will also be placed on the tooth.
• Root canal treatment can be done for a permanent teeth with closed apex. A temporary crown will be placed afterwards.
Treatment -2

• Apexification can also be done in a permanent tooth with open apex using calcium hydroxide or mineral trioxide aggregate (MTA).

• If the primary tooth is not restorable or the furcation area is perforated, the tooth will be extracted.

• A space maintainer is placed to keep the space for the succedaneous tooth if primary tooth is extracted. A denture is given if permanent tooth is extracted.
Lesion sterilization and tissue repair is another option. This can be done when there is resorption and furcation involvement.

Access cavity is made. Canal is irrigated with hypochlorite solution and dried.

Triple paste (Metronidazole, minocycline, ciprofloxacin) is placed in canal and access sealed.

Tooth crowned using temporary crowns.
Prevention

• Avoid cariogenic diets.
• More attention should be given to children by caregivers. They should assist/supervise/perform tooth brushing for the child when needed.
• Use mouth protector during sports to avoid fractures.
• Access regular caries preventive oral care.
Conclusion

• Dento alveolar abscess is a preventable condition.
• It has high morbidity rates with potential for mortality.
• When prevention fails, there are various case dependent treatment options.
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References


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**Quiz 1**

**Dentoalveolar abscess**

- Is a diffuse collection of pus
- Is high in growth factors
- Often a complication of caries, fracture and dental anomalies.
- Strict and facultative anaerobes are involved.
Abscesses in primary teeth

• The tooth will be hyperemic.
• Swelling will be seen around the root apex.
• Swelling will be seen around the attached gingiva.
• Pus erodes alveolar bone around the furcation area.
• Can be appropriately called periodontal abscess.
Quiz 3

Treatment of dentoalveolar abscess in children includes:

- Pulpectomy and crowning.
- Extraction with or without space maintainer
- Surgical extraction
- Indirect pulp capping
- Lesion sterilization and tissue repair.